Nobles County, Minnesota

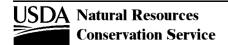
[This report lists only those map unit components that are rated as hydric. Dashes (---) in any column indicate that the data were not included in the database. Definitions of hydric criteria codes are included at the end of the report]

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
1003B:					
Udorthents (cut and fill land), 0 to 6 percent slopes	Udorthents, (cut and fill land)	100	Moraines		
1007:					
Udorthents, shallow (sanitary landfill)	Udorthents, shallow, sanitary landfill	100	Moraines	No	
1015A:					
Havelock clay loam, 0 to 2 percent slopes, frequently flooded	Havelock, frequently flooded	80	Flood plains	Yes	2B3, 4
	Havelock, occasionally flooded	10	Flood plains	Yes	2B3
	Calco, frequently flooded	5	Flood plains	Yes	2B3, 4
	Spillco, frequently flooded	5	Flood plains	Yes	4
1024A:					
Havelock clay loam, 0 to 2 percent slopes, occasionally flooded	Havelock, occasionally flooded	80	Flood plains	Yes	2B3
	Havelock, frequently flooded	10	Flood plains	Yes	2B3, 4
	Spillco, occasionally flooded	5	Flood plains	No	
	Comfrey, occasionally flooded	3	Flood plains	Yes	2B3
	Calco, occasionally flooded	2	Flood plains	Yes	2B3
GP:					
Pits, gravel-Udipsamments complex	Pits, gravel	80	Moraines, Outwash plains, Stream terraces		
	Udipsamments	20	Moraines, Outwash plains, Stream terraces		



Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L5A: Delft, overwash-Delft complex, 1 to 4	Delft, overwash	45	Moraines	No	
percent slopes					
	Delft	35	Moraines	Yes	2B3
	Delft, frequently flooded	7	Moraines	Yes	2B3
	Glencoe, depressional	4	Moraines	Yes	2B3, 3
	Terril	4	Moraines	No	
	Poorly drained soils	3	Moraines	Yes	2B3
	Canisteo	2	Moraines	Yes	2B3
L6A: Biscay loam, 0 to 2 percent slopes	Biscay	85	Outwash plains, Stream terraces	Yes	2B3
	Biscay, depressional	8	Outwash plains, Stream terraces	Yes	2B3, 3
	Mayer	5	Outwash plains, Stream terraces	Yes	2B3
	Cylinder	2	Outwash plains, Stream terraces	No	
L78A:					
Canisteo clay loam, 0 to 2 percent slopes	Canisteo	65	Moraines	Yes	2B3
	Crippin	10	Moraines	No	
	Glencoe, depressional	10	Moraines	Yes	2B3, 3
	Canisteo, depressional	5	Moraines	Yes	2B3, 3
	Harps	5	Moraines	Yes	2B3
	Webster	5	Moraines	Yes	2B3

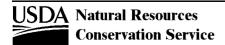


Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L79B:					
Clarion loam, 2 to 5 percent slopes	Clarion	70	Moraines	No	
	Clarion, moderately eroded	14	Moraines	No	
	Nicollet	9	Moraines	No	
	Ocheyedan	5	Moraines	No	
	Webster	2	Moraines	Yes	2B3
L83A: Webster clay loam, 0 to 2 percent slopes	Webster	65	Moraines	Yes	2B3
·	Glencoe, depressional	14	Moraines	Yes	2B3, 3
	Canisteo	8	Moraines	Yes	2B3
	Nicollet	8	Moraines	No	
	Poorly drained soils	5	Moraines	Yes	2B3
L85A: Nicollet clay loam, 1 to 3 percent slopes	Nicollet	85	Flats, Moraines, Rises	No	
Tribolict diay loam, 1 to 0 percent dioped					
	Clarion	10	Hills, Moraines	No	
	Webster	5	Flats, Moraines, Swales	Yes	2B3
L88A:					
Lura silty clay, depressional, 0 to 1 percent slopes	Lura, depressional	85	Lake plains	Yes	2B3, 3
	Brownton	7	Lake plains	Yes	2B3
	Depressional soils that have an organic surface layer	5	Lake plains	Yes	2B3, 3
	Prinsburg	3	Lake plains	Yes	2B3



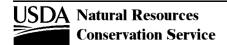
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L96B:					
Estherville-Hawick complex, 2 to 6 percent slopes	Estherville	55	Outwash plains, Stream terraces	No	
	Hawick	35	Outwash plains, Stream terraces	No	
	Tomall	8	Outwash plains, Stream terraces	No	
	Biscay	2	Outwash plains, Stream terraces	Yes	2B3
L97C:					
Hawick-Estherville complex, 6 to 12 percent slopes	Hawick	60	Outwash plains, Stream terraces	No	
	Estherville	30	Outwash plains, Stream terraces	No	
	Tomall	10	Outwash plains, Stream terraces	No	
L98A:					
Crippin-Nicollet complex, 1 to 3 percent slopes	Crippin	50	Moraines	No	
	Nicollet	40	Moraines	No	
	Canisteo	5	Moraines	Yes	2B3
	Clarion	5	Moraines	No	
L102C2:					
Omsrud-Storden complex, 6 to 12 percent slopes, moderately eroded	Omsrud, moderately eroded	45	Moraines	No	
	Storden, moderately eroded	24	Moraines	No	
	Omsrud	14	Moraines	No	
	Terril	10	Moraines	No	
	Delft	5	Moraines	Yes	2B3
	Crooksford	2	Moraines	No	



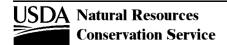
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L102D2:					
Omsrud-Storden complex, 12 to 18 percent slopes, moderately eroded	Omsrud, moderately eroded	45	Moraines	No	
	Storden, moderately eroded	20	Moraines	No	
	Omsrud	14	Moraines	No	
	Ridgeton	9	Moraines	No	
	Delft	6	Moraines	Yes	2B3
	Terril	6	Moraines	No	
L107A: Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes	Canisteo	50	Moraines	Yes	2B3
	Glencoe, depressional	35	Moraines	Yes	2B3, 3
	Harps	10	Moraines	Yes	2B3
	Canisteo, depressional	3	Moraines	Yes	2B3, 3
	Crippin	2	Moraines	No	
L111A: Nicollet silty clay loam, 1 to 3 percent slopes	Nicollet	80	Moraines	No	
	Okabena	14	Moraines	No	
	Clarion	4	Moraines	No	
	Webster	2	Moraines	Yes	2B3
L112A: Webster silty clay loam, 0 to 2 percent slopes	Webster	80	Moraines	Yes	2B3
dispos	Chetomba	10	Moraines	Yes	2B3
	Glencoe, depressional	6	Moraines	Yes	2B3, 3
	Canisteo	2	Moraines	Yes	2B3
	Nicollet	2	Moraines	No	



Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L126A:					
Coland silty clay loam, 0 to 2 percent slopes, occasionally flooded	Coland, occasionally flooded	80	Flood plains	Yes	2B3
	Minneopa, occasionally flooded	10	Flood plains	No	
	Havelock, occasionally flooded	5	Flats, Flood plains	Yes	2B3
	Spillville, occasionally flooded	5	Flood plains	No	
L127A:					
Coland silty clay loam, channeled, 0 to 2 percent slopes, frequently flooded	Coland, frequently flooded	80	Flood plains	Yes	2B3, 4
	Minneopa, occasionally flooded	10	Flood plains	No	
	Havelock, frequently flooded	5	Flood plains	Yes	2B3, 4
	Spillville, occasionally flooded	5	Flood plains	No	
L129B:					
Terril loam, 2 to 6 percent slopes	Terril	90	Moraines	No	
	Clarion	5	Moraines	No	
	Delft	5	Moraines	Yes	2B3
L130A:					
Okoboji mucky silty clay loam, depressional, 0 to 1 percent slopes	Okoboji, mucky silty clay loam, depressional	75	Lake plains, Moraines	Yes	2B3, 3
	Okoboji, silty clay loam, depressional	14	Lake plains, Moraines	Yes	2B3, 3
	Brownton	6	Depressions, Flats, Lake plains, Moraines, Rims	Yes	2B3
	Spicer	5	Depressions, Flats, Lake plains, Rims	Yes	2B3



Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L133A: Waldorf silty clay loam, 0 to 2 percent	Waldorf	80	Lake plains, Moraines	Yes	2B3
slopes		80			
	Marna	9	Lake plains, Moraines	Yes	2B3
	Chetomba	5	Lake plains, Moraines	Yes	2B3
	Brownton	2	Lake plains	Yes	2B3
	Lura, depressional	2	Lake plains	Yes	2B3, 3
	Barbert	1	Lake plains	Yes	2B3
	Ocheda	1	Lake plains, Moraines	No	
L134B: Clarion-Crooksford complex, 1 to 5 percent slopes	Clarion	56	Hills, Moraines	No	
parating support	Crooksford	15	Hills, Moraines	No	
	Clarion, moderately eroded	14	Hills, Moraines	No	
	Nicollet	5	Moraines	No	
	Swanlake	5	Hills, Moraines	No	
	Terril	5	Hills, Moraines	No	
L135A: Okabena silty clay loam, 1 to 3 percent slopes	Okabena	85	Moraines	No	
опороз	Kingston	5	Moraines	No	
	Nicollet	4	Moraines	No	
	Chetomba	2	Moraines	Yes	2B3
	Ocheda	2	Moraines	No	
	Waldorf	2	Moraines	Yes	2B3



Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L136A: Crooksford silty clay loam, 1 to 3	Crooksford	80	Flats, Moraines, Rises	No	
percent slopes	Ciooksioid	80	riats, Morallies, Nises	NO	
	Nicollet	8	Flats, Moraines, Rises	No	
	Clarion	7	Hills, Moraines	No	
	Okabena	3	Lake plains, Moraines	No	
	Webster	2	Moraines	Yes	2B3
L137A: Cylinder loam, 0 to 2 percent slopes	Cylinder	90	Outwash plains, Stream terraces	No	
	Biscay	4	Outwash plains, Stream terraces, Swales	Yes	2B3
	Wadena	4	Hills, Hills, Outwash plains, Terraces	No	
	Linder	2	Outwash plains, Stream terraces	No	
L138B:					
Estherville loam, 1 to 6 percent slopes	Estherville	85	Hills, Hills, Outwash plains, Terraces	No	
	Wadena	7	Hills, Hills, Outwash plains, Terraces	No	
	Hawick	5	Hills, Hills, Outwash plains, Stream terraces	No	
	Cylinder	3	Outwash plains, Stream terraces	No	



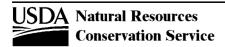
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L139A: Wadena loam, 0 to 2 percent slopes	Wadena	85	Outwash plains, Stream terraces	No	
	Estherville	5	Outwash plains, Stream terraces	No	
	Kanaranzi	5	Outwash plains, Stream terraces	No	
	Cylinder	3	Outwash plains, Stream terraces	No	
	Dickinson	2	Outwash plains, Stream terraces	No	
L139B: Wadena loam, 2 to 6 percent slopes	Wadena	85	Hills, Hills, Outwash plains, Terraces	No	
	Estherville	7	Hills, Hills, Outwash plains, Terraces	No	
	Cylinder	3	Outwash plains, Stream terraces	No	
	Dickinson	3	Hills, Hills, Outwash plains, Stream terraces	No	
	Biscay	2	Flats, Outwash plains, Swales	Yes	2B3
L140A: Ocheda silty clay loam, 1 to 3 percent	Ocheda	85	Lake plains, Moraines	No	
slopes	Guckeen	5	Lake plains, Moraines	No	
	Collinwood	3	Lake plains, Moraines	No	
	Nicollet	3	Flats, Moraines, Rises	No	
	Clarion	2	Hills, Moraines	No	
	Marna	2	Lake plains, Moraines	Yes	2B3



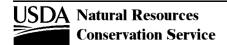
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L141A: Spillville loam, 0 to 2 percent slopes, occasionally flooded	Spillville, occasionally flooded	86	Flood plains	No	
	Coland, occasionally flooded	8	Flood plains	Yes	2B3
	Hanlon, occasionally flooded	4	Flood plains	No	
	Havelock, occasionally flooded	2	Flood plains	Yes	2B3
L144A:					
Chetomba silty clay loam, 0 to 2 percent slopes	Chetomba	75	Moraines	Yes	2B3
percent slopes	Waldorf	13	Moraines	Yes	2B3
	Webster	5	Moraines	Yes	2B3
	Okoboji, depressional	3	Moraines	Yes	2B3, 3
	Prinsburg	3	Moraines	Yes	2B3
	Okabena	1	Moraines	No	
L145A: Canisteo silty clay loam, 0 to 2 percent slopes	Canisteo	80	Depressions, Flats, Moraines, Rims	Yes	2B3
	Glencoe, depressional	10	Moraines	Yes	2B3, 3
	Webster	5	Moraines	Yes	2B3
	Prinsburg	4	Depressions, Flats, Lake plains, Moraines, Rims	Yes	2B3
	Crippin	1	Moraines	No	
L146A: Glencoe silty clay loam, depressional, 0 to 1 percent slopes	Glencoe, depressional	80	Moraines	Yes	2B3, 3
	Canisteo	10	Depressions, Flats, Moraines, Rims	Yes	2B3
	Harps	10	Moraines	Yes	2B3



Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L150A:					
Prinsburg silty clay loam, 0 to 2 percent slopes	Prinsburg	75	Lake plains, Moraines	Yes	2B3
	Chetomba	14	Lake plains, Moraines	Yes	2B3
	Webster	4	Lake plains, Moraines	Yes	2B3
	Canisteo	3	Lake plains, Moraines	Yes	2B3
	Okabena	2	Lake plains, Moraines	No	
	Okoboji, depressional	2	Lake plains, Moraines	Yes	2B3, 3
L151A: Glencoe mucky silty clay loam, ponded, 0 to 1 percent slopes	Glencoe, ponded	80	Moraines	Yes	2B3, 3
portucia, o to 1 portucint dioped	Okoboji, ponded	14	Moraines	Yes	2B3, 3
	Klossner, ponded	6	Moraines	Yes	1, 3
L152B: Lowlein-Round lake complex, 1 to 6 percent slopes	Lowlein	60	Moraines	No	
porcent energy	Round Lake	20	Moraines	No	
	Nicollet	12	Moraines	No	
	Farrar	6	Moraines	No	
	Webster	2	Moraines	Yes	2B3
L153A: Essexville sandy loam, 0 to 2 percent slopes	Essexville	85	Moraines	Yes	2B3
Siopes	Canisteo	5	Moraines	Yes	2B3
	Glencoe, depressional	4	Moraines	Yes	2B3, 3
	Belleville	3	Moraines	Yes	2B3
	Very poorly drained soils in depressions	2	Moraines	Yes	2B3, 3
	Somewhat poorly drained soils	1	Moraines	No	

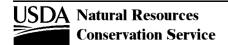


Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L154E:					_
Belview-Ridgeton complex, 15 to 45 percent slopes	Belview	60	Moraines	No	
	Ridgeton	22	Moraines	No	
	Omsrud	14	Moraines	No	
	Delft	2	Moraines	Yes	2B3
	Terril	2	Moraines	No	
L155A:					
Okoboji mucky silty clay loam, ponded, 0 to 1 percent slopes	Okoboji, ponded	85	Moraines	Yes	2B3, 3
	Glencoe, ponded	10	Moraines	Yes	2B3, 3
	Blue Earth, ponded	3	Moraines	Yes	2B3, 3
	Klossner, ponded	2	Moraines	Yes	1, 3
L156C2:					
Omsrud-Storden-Pilot Grove complex, 6 to 12 percent slopes, moderately	Omsrud, moderately eroded	44	Moraines	No	
eroded	Storden, moderately eroded	24	Moraines	No	
	Pilot Grove	20	Moraines	No	
	Hawick	8	Moraines	No	
	Delft	2	Moraines	Yes	2B3
	Terril	2	Moraines	No	

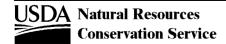


Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L156D2:					
Omsrud-Storden-Pilot Grove complex, 12 to 18 percent slopes, moderately	Omsrud, moderately eroded	50	Moraines	No	
eroded	Storden, moderately eroded	25	Moraines	No	
	Pilot Grove	15	Moraines	No	
	Hawick	4	Moraines	No	
	Delft	2	Moraines	Yes	2B3
	Ridgeton	2	Moraines	No	
	Terril	2	Moraines	No	
L157A:					
Lowlein loam, 0 to 2 percent slopes	Lowlein	78	Moraines	No	
	Nicollet	14	Moraines	No	
	Round lake	4	Hills, Moraines	No	
	Farrar	2	Hills, Moraines	No	
	Webster	2	Moraines	Yes	2B3
L158B:					
Round lake sandy loam, 1 to 6 percent slopes	Round Lake	80	Moraines	No	
	Lowlein	13	Moraines	No	
	Ocheyedan	3	Moraines	No	
	Estherville	2	Moraines	No	
	Webster	2	Moraines	Yes	2B3

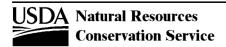


Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L159A:					
Knoke mucky silty clay loam, depressional, 0 to 1 percent slopes	Knoke, depressional	85	Moraines	Yes	2B3, 3
	Okoboji, depressional	5	Moraines	Yes	2B3, 3
	Essexville	4	Moraines	Yes	2B3
	Canisteo, depressional	3	Moraines	Yes	2B3, 3
	Canisteo	3	Moraines	Yes	2B3
L160B:					
Dickinson sandy loam, loamy substratum, 1 to 6 percent slopes	Dickinson, loamy substratum	85	Moraines	No	
	Farrar	8	Moraines	No	
	Lowlein	7	Moraines	No	
L161C:					
Estherville-Pilot Grove complex, 6 to 12 percent slopes	Estherville	38	Moraines	No	
	Pilot Grove	38	Moraines	No	
	Well drained soils	14	Moraines	No	
	Hawick	6	Moraines	No	
	Delft	2	Moraines	Yes	2B3
	Terril	2	Moraines	No	
L162B:					
Clarion-Round lake complex, 2 to 6 percent slopes	Clarion	45	Moraines	No	
	Round Lake	30	Moraines	No	
	Estherville	8	Moraines	No	
	Lowlein	5	Moraines	No	
	Nicollet	5	Moraines	No	
	Swanlake	5	Moraines	No	
	Webster	2	Moraines	Yes	2B3



Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
L163A:					
Okoboji silty clay loam, depressional, 0 to 1 percent slopes	Okoboji, depressional	92	Moraines	Yes	2B3, 3
	Canisteo	2	Moraines	Yes	2B3
	Harpster	2	Moraines	Yes	2B3
	Knoke, depressional	2	Moraines	Yes	2B3, 3
	Prinsburg	2	Moraines	Yes	2B3
L170B:					
Estherville-Round lake complex, 2 to 6 percent slopes	Estherville	50	Moraines	No	
	Round Lake	45	Moraines	No	
	Lowlein	3	Moraines	No	
	Poorly drained soils	2	Moraines	Yes	2B3
M-W: Water, miscellaneous	Water, miscellaneous	100			
P1B: Annieville silty clay loam, 2 to 5 percent slopes	Annieville	80	Till plains	No	
	McCreath	10	Till plains	No	
	Galva	5	Till plains	No	
	Primghar	5	Till plains	No	
P2A: McCreath silty clay loam, 1 to 3 percent slopes	McCreath	80	Till plains	No	
,	Gillett Grove	10	Till plains	Yes	2B3
	Annieville	5	Till plains	No	
	Primghar	5	Till plains	No	



Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
3A:					
Biscay silty clay loam, 0 to 2 percent slopes, occasionally flooded	Biscay, occasionally flooded	85	Outwash plains	Yes	2B3
	Cylinder, occasionally flooded	10	Outwash plains	No	
	Talcot, occasionally flooded	5	Outwash plains	Yes	2B3
7A: Comfrey clay loam, 0 to 2 percent slopes, occasionally flooded	Comfrey, occasionally flooded	80	Flood plains	Yes	2B3
nopos, coodsionally nocded	Colo, occasionally flooded	5	Flood plains	Yes	2B3
	Havelock, occasionally flooded	5	Flood plains	Yes	2B3
	Havelock, frequently flooded	5	Flood plains	Yes	2B3, 4
	Spillco, occasionally flooded	5	Flood plains	No	
9A: Gillett Grove silty clay loam, 0 to 2 percent slopes	Gillett Grove	85	Till plains	Yes	2B3
	McCreath	10	Till plains	No	
	Afton, frequently flooded	5	Till plains	Yes	2B3
12B:					
Everly silty clay loam, 2 to 6 percent slopes	Everly	80	Till plains	No	
	Sac	10	Till plains	No	
	Ransom	5	Till plains	No	
	Wilmonton	5	Till plains	No	
12C2: Everly silty clay loam, 6 to 12 percent clopes, moderately eroded	Everly, moderately eroded	80	Till plains	No	
	Everly	10	Till plains	No	
	Moneta	5	Till plains	No	
	Wilmonton	5	Till plains	No	



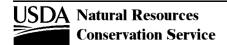
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
P15B:					
Galva silty clay loam, 2 to 5 percent slopes	Galva	80	Till plains	No	
	Primghar	10	Till plains	No	
	Annieville	5	Till plains	No	
	Sac	5	Till plains	No	
P20B: Judson silt loam, 3 to 8 percent slopes	Judson	80	Till plains	No	
	Primghar	10	Till plains	No	
	Galva	5	Till plains	No	
	Whitewood, overwash	5	Till plains	No	
P21A: Marcus silty clay loam, 0 to 2 percent slopes	Marcus	80	Till plains	Yes	2B3
•	Whitewood, frequently flooded	10	Till plains	Yes	2B3
	Primghar	5	Till plains	No	
	Spicer	5	Till plains	Yes	2B3
P27A: Primghar silty clay loam, 1 to 3 percent slopes	Primghar	80	Till plains	No	
Siopes	Galva	8	Till plains	No	
	Marcus	8	Till plains	Yes	2B3
	Judson	4	Till plains	No	
P28A: Ransom silty clay loam, 1 to 3 percent slopes	Ransom	80	Till plains	No	
	Rushmore	8	Till plains	Yes	2B3
	Sac	8	Till plains	No	
	Primghar	4	Till plains	No	



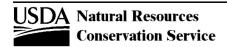
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
P29A:					
Rushmore silty clay loam, 0 to 2 percent slopes	Rushmore	80	Till plains	Yes	2B3
	Ransom	10	Till plains	No	
	Whitewood, frequently flooded	10	Till plains	Yes	2B3
P30B: Sac silty clay loam, 2 to 5 percent slopes	Sac	80	Till plains	No	
Cloped	Annieville	10	Till plains	No	
	Primghar	5	Till plains	No	
	Ransom	5	Till plains	No	
P31A: Spicer silty clay loam, 0 to 2 percent slopes	Spicer	85	Till plains	Yes	2B3
Stopes	Marcus	10	Till plains	Yes	2B3
	Whitewood	5	Till plains	Yes	2B3
P33A:					
Spillco silt loam, 0 to 2 percent slopes, occasionally flooded	Spillco, occasionally flooded	85	Flood plains	No	
	Spillco, frequently flooded	10	Flood plains	Yes	4
	Comfrey, occasionally flooded	5	Flood plains	Yes	2B3
P36A:					
Talcot silty clay loam, 0 to 2 percent slopes, occasionally flooded	Talcot, occasionally flooded	85	Outwash plains	Yes	2B3
	Biscay, occasionally flooded	10	Outwash plains	Yes	2B3
	Cylinder, occasionally flooded	5	Outwash plains	No	
P37D:					
Talmo gravelly sandy loam, 6 to 35 percent slopes	Talmo	90	Outwash plains	No	
	Kanaranzi	5	Outwash plains	No	
	Thurman	5	Outwash plains	No	



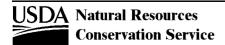
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
P38B:	Thomas	00	Outuralisation	No	
Thurman sandy loam, 2 to 6 percent slopes	Thurman	90	Outwash plains	No	
	Henkin	10	Outwash plains	No	
P38C: Thurman sandy loam, 6 to 12 percent slopes	Thurman	90	Outwash plains	No	
Slopes	Henkin	10	Outwash plains	No	
P43A:					
Wilmonton silty clay loam, 1 to 3 percent slopes	Wilmonton	85	Till plains	No	
	Everly	5	Till plains	No	
	Ransom	5	Till plains	No	
	Rushmore	5	Till plains	Yes	2B3
P45E: Moneta clay loam, 15 to 45 percent slopes	Moneta	85	Till plains	No	
•	Judson	10	Till plains	No	
	Soils that are moderately deep to carbonates	5	Till plains	No	
P48A: Allendorf silty clay loam, 0 to 2 percent slopes	Allendorf	85	Outwash plains	No	
Siopes	Kanaranzi	5	Outwash plains	No	
	Sac	5	Outwash plains	No	
	Soils that are moderately well drained	5	Outwash plains	No	
P48B: Allendorf silty clay loam, 2 to 6 percent slopes	Allendorf	85	Outwash plains	No	
σιόροσ	Kanaranzi	5	Outwash plains	No	
	Sac	5	Outwash plains	No	
	Soils that are moderately well drained	5	Outwash plains	No	



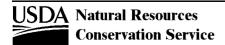
Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
P49A:					
Comfrey clay loam, 0 to 2 percent slopes, frequently flooded	Comfrey, frequently flooded	85	Flood plains	Yes	2B3, 4
	Comfrey, occasionally flooded	5	Flood plains	Yes	2B3
	Havelock, frequently flooded	5	Flood plains	Yes	2B3, 4
	Spillco, occasionally flooded	5	Flood plains	No	
P50B:	Essentia	00	T'll als's s	NI-	
Everly-Kanaranzi complex, 2 to 6 percent slopes	Everly	60	Till plains	No	
	Kanaranzi	25	Outwash plains	No	
	Wilmonton	10	Till plains	No	
	Ransom	5	Till plains	No	
P51C2:					
Everly-Moneta-Talmo complex, 6 to 12 percent slopes, moderately eroded	Everly, moderately eroded	40	Till plains	No	
	Moneta, moderately eroded	20	Till plains	No	
	Talmo, moderately eroded	20	Outwash plains	No	
	Everly	10	Till plains	No	
	Kanaranzi	5	Outwash plains	No	
	Wilmonton	5	Till plains	No	
P52D2:					
Moneta-Everly-Talmo complex, 12 to 18 percent slopes, moderately eroded	Moneta, moderately eroded	40	Till plains	No	
To porcont diopod, moderatory orocod	Everly, moderately eroded	20	Till plains	No	
	Talmo, moderately eroded	20	Outwash plains	No	
	Everly	10	Till plains	No	
	Kanaranzi	5	Outwash plains	No	
	Wilmonton	5	Till plains	No	
			•		



Nobles County, Minnesota

Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric rating	Hydric criteria
P53C2:					
Everly-Moneta complex, 6 to 12 percent slopes, moderately eroded	Everly, moderately eroded	55	Till plains	No	
	Moneta, moderately eroded	25	Till plains	No	
	Everly	10	Till plains	No	
	Wilmonton	10	Till plains	No	
P54D2:					
Moneta-Everly complex, 12 to 18 percent slopes, moderately eroded	Moneta, moderately eroded	45	Till plains	No	
	Everly, moderately eroded	40	Till plains	No	
	Everly	10	Till plains	No	
	Wilmonton	5	Till plains	No	
P55A:					
Kato silty clay loam, 0 to 2 percent slopes	Kato	90	Outwash plains	Yes	2B3
	Somewhat poorly drained soils	10	Outwash plains	No	
P56A:	Kanaranzi	90	Outwook plains	No	
Kanaranzi silt loam, 0 to 2 percent slopes		80	Outwash plains	No	
	Allendorf	10	Outwash plains	No	
	Moderately well drained soils	10	Outwash plains	No	
P56B: Kanaranzi silt loam, 2 to 6 percent slopes	Kanaranzi	80	Outwash plains	No	
	Allendorf	14	Outwash plains	No	
	Talmo	6	Outwash plains	No	
W: Water	Water	100			



This table lists the map unit components that are rated as hydric soils in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2003) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and others, 2002).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2B3). Definitions for the codes are as follows:

- 1. All Histels except for Folistels, and Histosols except for Folists.
- 2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. are somewhat poorly drained and have a water table at the surface (0.0 feet) during the growing season, or
 - B. are poorly drained or very poorly drained and have either:
 - 1) a water table at the surface (0.0 feet) during the growing season if textures are coarse sand, sand, or fine sand in all layers within a depth of 20 inches, or
 - 2) a water table at a depth of 0.5 foot or less during the growing season if
 - permeability is equal to or greater than 6.0 in/hr in all layers within a depth of 20 inches, or
 - 3) a water table at a depth of 1.0 foot or less during the growing season if permeability is less than 6.0 in/hr in any layer within a depth of 20 inches.
- 3. Soils that are frequently ponded for long or very long duration during the growing season.
- 4. Soils that are frequently flooded for long or very long duration during the growing season.

References

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. September 18, 2002. Hydric soils of the United States.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Hurt, G.W., P.M. Whited, and R.F. Pringle, editors. Version 5.0, 2002. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 2003. Keys to soil taxonomy. 9th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

